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THE CANADA LAND INVENTORY

ARDA

OBJECTIVES,
SCOPE
AND
ORGANIZATION

Report No. 1

January, 1965



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QUEEN'S PRINTER AND CONTROLLER OF STATIONERY
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THE CANADA LAND INVENTORY

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OBJECTIVES,
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DEPARTMENT OF FORESTRY, CANADA

The first consideration in any approach to the problem of conservation should be the proper use of land. If land is properly used, a start has already been made in conservation. In the process of trial and error over the centuries, land is gradually put to the use for which it is best adapted, but the process is often a long and costly one, both for the land and for its occupants.

Sub-Committee on Land Use,
National Committee on Soil Conservation,
1947.

Where the fields and forests meet, one of the main problems posed ever since settlement began has been that of land utilization. In the past, decisions with regard to land use have been left almost entirely to the individual. Little attempt has been made to determine the most suitable over-all programs. Today it is becoming generally agreed that land utilization is of concern to the community and to the country as a whole, as well as to the individual.

Dr. G. V. Haythorne,
To the National Convention,
Agricultural Institute of Canada,
1950.

THE CANADA LAND INVENTORY

The Canada Land Inventory is a comprehensive survey of land capability and use for various purposes. It will include assessments of land capability for agriculture, forestry, recreation and wildlife; information on present land use; and assessments of social and economic factors relative to land use. It is being undertaken as a co-operative federal-provincial program administered under the Agricultural Rehabilitation and Development Act (ARDA) of June, 1961.

Competition for land for various alternative uses, combined with increasingly pervasive governmental economic and social planning in rural areas, has made apparent the need for improved knowledge of the productive capability of lands, their location and their extent.

The deliberations of the "Resources for Tomorrow" Conference of 1961 resulted in strong recommendations, by specialists representing all resource sectors, for a land capability survey. As comprehensive resource management and social planning programs began to take shape under the aegis of the Agricultural Rehabilitation and Development Act, and as provincial governments ventured farther into the sphere of regional development planning, it became increasingly apparent that without a land capability inventory, programs of land adjustment and regional economic development would be based on judgements which, in the absence of essential information, would be fallible and costly.

The relatively abrupt transition from a primarily agricultural economy to a primarily urban-industrial economy has been accompanied by changes in land use, and further changes may be expected as further economic and demographic changes occur. Effective planning for changes of this nature requires the basis of firm knowledge of the physical quality of lands and soils and the location and quantity of each category.

The Technical Background of the Canada Land Inventory

The co-operative Soil Survey organizations of Canada have been classifying and mapping soils for several decades according to their inherent characteristics and

their qualities as natural bodies. Most of the agricultural areas of Canada have been mapped, at varying scales and degrees of classification intensity. The Soil Surveys have resulted in published maps and reports which are the source of much fundamental information on the soils of Canada. The Soil Surveys were designed mainly to meet the needs of the agricultural industry; however, they provide objective classifications of soils—the essential basis for subjective interpretations to assess the capability of land for various alternative uses.

Land classification according to present use is another approach that has been the subject of studies by geographers, economists, land administrators and planners. Classifying and mapping land use is quite distinct from the work of the Soil Survey organizations, i.e. mapping soils according to their inherent characteristics. The Geographical Branch of the Canada Department of Mines and Technical Surveys has been engaged in a program of land use mapping since 1950 and is now accelerating the program through extensive interpretation of aerial photographs. The Dominion Bureau of Statistics, the Economics Division of the Canada Department of Agriculture, and the statistical agencies of the provinces are continuously compiling information on social and economic factors of land use.

A third method of land classification, employed by the Canada Land Inventory, is assessment according to its capability for different uses. As the incentive to use land more efficiently is increased through competition, there is increasing recognition of the need to assess land capability and apply this information to land use policy and program formulation. Accurate assessment of land capability for various uses is possible in Canada because the fundamental work has been done in classifying and mapping soils, gathering climatic data, studying present uses, and compiling statistics on productive capacity. With the aid of this information, scientists in the disciplines related to agriculture, forestry, recreation and wildlife, are able to rate the capability of land, employing classification systems that provide a basis for effective land use planning. The

purpose of the Canada Land Inventory is to enable the numerous agencies concerned to develop classification systems and to carry out the task of land capability rating.

The Canada Land Inventory will cover the agriculturally settled portions of rural Canada, and adjoining areas which affect the income and employment opportunities of rural residents. Thus it will cover the area of Canada where questions of alternative use of land have a strong bearing on rural development.

What the Inventory Will Provide

The inventory is designed primarily for planning, rather than for management. It will not provide the detailed information required for management of individual parcels of land. It will be of a reconnaissance type which will provide information essential to land resource development planning at the municipal, provincial and federal levels of government. It will not provide detailed information on small parcels of land such as would be necessary for land resource management planning in small watersheds, local government units, etc. The inventory, using the computer mapping technique, will facilitate future intensification and updating, as more detailed land capability information becomes available and changes occur in the socio-economic factors.

Recent History of the Inventory

The need for a land capability inventory has not arisen suddenly; it is derived from several decades of technological and social change of increasing intensity. Similarly, the amount of basic technical data on soils, and technical skills available, have constantly increased to the point where an inventory has become feasible. The federal-provincial-university soil survey organizations established precedents in co-operative undertakings which are invaluable for an undertaking such as the Canada Land Inventory. The continuing Senate of Canada Special Committee on Land Use, and the "Resources for Tomorrow" Conference of 1961, provided forums for the increasing body of opinion regarding the needs and possibilities for an inventory.¹ In 1962, terms of reference, organizational form, and financial and administrative capability to conduct the inventory, were established in the ARDA Administration.

In November 1962, a seminar on the proposed inventory was held in Ottawa. Participants were drawn from all regions of Canada, representing most relevant

disciplines and areas of interest. They expressed the unanimous opinion that an inventory was urgently needed. They recommended that it include provision for research and data collection on soil capability for agriculture, soil capability for forestry, land suitability for wildlife management, land suitability for recreational uses, present land use, socio-economic land classification and climatology classification.

The first major step toward definition of immediate objectives was taken in Winnipeg by the National Soil Survey Committee at a meeting in March 1963. The meeting proposed that the National Soil Survey Committee develop a national soil capability classification system for agriculture. The meeting also proposed that with the assistance of ARDA the federal-provincial soil survey organizations establish an inventory based on the new classification to cover the settled areas of Canada. The proposed classification system was established in May 1963.

Formal federal-provincial consideration of the Canada Land Inventory took place in November 1963, when a memorandum on the subject was presented to the Canadian Council of Resource Ministers. This memorandum, put forward by the ARDA Administration, stated the need for the inventory, outlined its proposed scope, and presented recommendations for a division of responsibilities. The Canadian Council of Resource Ministers approved the proposal in principle and recommended that the inventory proceed on the basis of working agreements between individual provinces and the ARDA Administration.

On October 3, 1963, the Government of Canada approved the undertaking, under ARDA, of this comprehensive land resource inventory. The inventory is, accordingly, being planned and implemented co-operatively by the federal government and all provincial governments individually. The federal government will reimburse each province for all additional direct operational and staff costs incurred in the conduct of the project.

During 1963 and 1964, the federal and provincial ARDA administrations have, with the support of many other organizations, established an effective pattern of co-ordination throughout Canada. Some 100 agencies of the eleven senior governments are or will be involved, as will numerous universities, non-governmental organizations, private companies and private individuals. With such broad participation, one essential prerequisite for success is co-ordination—chiefly in the formulation of practical, acceptable objectives and criteria, and in reasonably precise scheduling of the diverse components of the inventory.

¹ See Appendix I for recommendations of these groups.

Objective and Scope

The broad objective of the Canada Land Inventory is to classify lands as to their use capabilities, and to obtain a firm estimate of the extent and location of each land class. These lands would be classified according to:

- their physical capability for use in agriculture, forestry, recreation and wildlife management;
- their present use;
- socio-economic factors relative to their present use.

This vast amount of information on Canada's land resources is to be gathered, stored, analyzed and published in such a way that the inventory will become a working tool in the rural development program across Canada.

The task entails bringing together all existing information on the capabilities and uses of land, filling in the gaps in the existing information and interpreting the material into suitable classification systems. The collection of this data will involve a considerable force of federal and provincial resources research staffs, augmented by research assistants and consulting agencies.

It is the object of the Canada Land Inventory to store, analyze and publish this information in forms required for land use planning at the township, provincial, regional and national levels. Such an objective presents a formidable task of compilation, storage and analysis of data. Conventional methods of map compilation, area measurements and comparison between maps and statistical tables, would impose severe restrictions on the inventory program. For this reason, the ARDA Directorate has investigated the feasibility of computer mapping—a system whereby quantities of data from both maps and statistical tables can be stored in a form which is amenable to analysis by electronic computers. No existing computer mapping system is suited to the needs of the inventory, but the investigation has indicated that important advances are feasible in the difficult task of synthesizing the physical and economic data required for evaluation of land areas.

The over-all objective of the inventory is to provide the facts of supply and demand on which to base decisions concerning the utilization of land resources. More specific objectives have been defined relative to each sector of the inventory.

(a) *Soil Capability for Agriculture*

A nation-wide inventory of soil capability for agriculture is now underway. This inventory is being developed through co-operative projects between the federal and provincial ARDA Administrations and the federal-provincial soil survey organizations.

The national system of classification of soil capability for agriculture, developed by the National Soil Survey Committee and federal and provincial ARDA Administrations, is being applied to all areas that have been covered by systematic soil surveys. This system will probably be extended in the near future to the whole of the agriculturally developed portion of Canada.

Economic appraisal of agricultural lands will be carried out at a later stage of the inventory, the comprehensiveness and intensity of the appraisal varying to suit the planning requirements of various provinces and regions.

The field interpretation and mapping of the soil capability classes and sub-classes is being done on various scales, usually conforming to the scale of the Soil Survey maps for the area. These manuscript maps, usually scaled at one mile or two miles to the inch, will be used as the basis for production of computer mapping input data. They will also be used as the basis for compilation of generalized maps at the scale of 1:250,000 to be published in coloured map form.

The Economics Branch of the Canada Department of Agriculture will undertake the compilation and analysis of data pertaining to agricultural land use, and will provide co-ordination in the collecting of agricultural and economic data not provided through the Census of Canada.

(b) *Soil Capability for Forestry*

A classification of soil capability for forestry within the inventory area of Canada will provide an improved technical basis for land use planning, and will indicate the land on which intensive management practices are economically justified. Because of the long-term nature of a forest crop, dedication of land to forest production must be preceded by careful consideration of the possible alternative uses.

The forest land inventory program requires the formulation and adoption of a national classification system. This can be achieved through pilot classification programs in each province, followed by regional and national discussions among federal, provincial and university personnel. The basic information for such a classification now exists in most provinces, in the form of soil survey maps and forest inventory data. The classification will be accomplished largely through interpretation of this information and the collection of necessary supplementary data.

Forest land capability maps would be of most value at the scale of 1:50,000. The program has, therefore, been designed so that information from maps at this scale can be processed, stored and reproduced by a computer system. Generalized maps will probably be

produced for publication in colour at the scale of 1:250,000.

(c) *Land Suitability for Recreation*

Increasing urbanization, improved transportation, and higher incomes have, during the past decade, led to a vast increase in demand for park and recreational resources. This has been reflected in a greatly expanded tourist industry. Industrial automation, barely felt as yet, will within a decade or two compound the demand for recreational use of land and water. In Canada, research on potential demand and actual supply of recreational resources is in its infancy. As with other sectors, effective resource use is impossible without the practical guidelines of a land suitability and capability survey.

The primary objective of the recreational sector of the inventory is to obtain a firm estimate of the quantity, quality and location of the outdoor recreational lands in the settled portion of Canada. This will provide basic information to aid governments in the formulation of policies and programs related to promotion, development and regulation relative to recreational resource use.

The inventory will be aimed at providing a guide to the physical potential of land areas for recreation on the basis of minimum inputs of capital or labour. It is also intended to provide socio-economic data relating available land to the quantity and quality of land needed to meet predicted demand.

The degree of detail of this inventory will vary according to the kind of land and the demand pressure in given regions. The initial study will be to identify sites having recreational or park potential. This will be followed by more intensive studies to produce generalized land capability maps. The initial stage of the inventory will involve a series of pilot studies to establish or assess methodology in this relatively new field. The National Parks Branch, Department of Northern Affairs and National Resources, will provide staff co-ordination and general guidance with respect to the recreation aspect of the inventory.

(d) *Land Suitability for Wildlife*

Wildlife (including sport fish) constitutes a separate resource with distinct intrinsic values, but it must more and more be seen as a recreational resource. Decisions on land use for wildlife should be made in the context of recreational requirements. Unlike other recreational resources, fish and wildlife are mobile. Thus the land required to produce fish and wildlife may be different from, and additional to, the land required for their utilization.

No nationally accepted system of classification of land suitability for wildlife management has been developed. However, experience in this field has been gained in a number of provinces during recent years. The Canadian Wildlife Service and several provincial game agencies are actively considering techniques of assessment and classification which may be applied in various parts of Canada and compared between regions.

A classification of land suitability for wildlife will have to take account of the differing environmental requirements of the different wildlife species. It will also have to reflect both the basic physical characteristics of sites and the characteristics of habitats which presently exist on them. These problems are being considered and a practical classification system is evolving.

Water courses and water bodies can be evaluated as to their contribution to recreational fishing, and such evaluations will be made. Co-operative work by provincial and federal wildlife specialists will be required in the application of systems of appraisal and classification, as well as in their development. The Canadian Wildlife Service, National Parks Branch, Department of Northern Affairs and National Resources, will provide staff co-ordination and over-all guidance with respect to the wildlife aspects of the Canada Land Inventory.

(e) *Present Land Use*

The present land use mapping program of the Geographical Branch of the Canada Department of Mines and Technical Surveys has been underway since 1950. The mapping of present land use has been done at different scales and at corresponding different levels of classification intensity. This program can be speeded up by making maximum use of Census of Canada data, aerial photograph interpretation and other sources of information, such as assessment field sheets. Coverage of the settled portion of Canada for the purposes of the proposed inventory could be completed within three to four years at a scale of 1:50,000. The resulting data could be made available as computer mapping input data and could be published as required.

(f) *Socio-economic Land Classification*

Statistical data are available from the records of the Dominion Bureau of Statistics on most of the important socio-economic factors associated with present land use. The data include: type of farming, economic classification of farms, age of operators, size of farms, capital investment in farms, and population characteristics. Much of this information is available on computer tapes, which may be readily utilized in an inventory program employing computer mapping. The inventory

will collate the assessed capability of the land and socio-economic data relative to its use, to arrive at an assessment of the human factor of present use—which in turn will provide guidelines for future development programs.

(g) *Agro-climatic Classification*

A federal ARDA research project is currently underway to assess the climatic records pertinent to agro-climatic classifications, and to develop maps of climatic zones significant to crop production. The Ontario Research Foundation is conducting this research under the guidance of an inter-agency committee. The Meteorological Branch, Department of Transport, is providing the necessary climatic data.

In the past there has been no firm requirement for agro-climatic classifications for Canada; thus no recognized classification system has been developed prior to this study. This study will produce first approximations for agro-climatic zonations and will indicate requirements for further research or zonation techniques. A computer mapping system of inventory data processing will make it possible to include detailed agro-climatic characterizations as part of the inventory.

(h) *Inventory Data Co-ordination*

Probably the most critical factor of the physical organization of the inventory is development of a system which will enable the information not only to be stored, but to be compiled, compared and brought to a form where it can be readily used.

The statistical data will be prepared in a form suited to handling by electronic computers. The ability of computers to tabulate information and print the results will be central to the data handling system. Many maps will accumulate, and a method has been developed to scan maps with special equipment, record the information in the form of numbers, and handle the numbers using the same type of computers as are used for handling the statistical data. This will allow storage of maps in compact numerical form. It will also allow rapid comparisons between the digitized maps, and the results may be either directly printed out, or directly compared with statistics.

This approach will allow varied use of the data and its application to the multitude of different projects requiring inventory data.

Organization and Methods

The Canada Land Inventory is being undertaken as a co-operative federal-provincial research project under the Agricultural Rehabilitation and Development Act.

The division of responsibilities between the federal and provincial governments has been agreed to in principle as follows:

Government of Canada

To sponsor and co-ordinate the planning, development and publication of the inventory:

- to finance all additional expenditures required of the provinces in the conduct of the inventory.
- to foster the development of national classification systems and criteria for their application, through co-operative work of federal and provincial agencies,
- to provide technical assistance to the provinces in the conduct of the inventory, through the co-operative work of federal research personnel and provincial staffs in related fields,
- to provide interprovincial co-ordination of survey methodology and presentation of results,
- to provide facilities for data processing and map compilation as required in the inventory,
- to undertake the publication of results as required, on a national basis, at the scale of 1:250,000.

Provincial Governments

To undertake the planning, development and publication of the inventory within the province, with financial and technical assistance of the federal government:

- to establish a Provincial Inventory Committee to provide technical and administrative co-ordination for the inventory within the province,
- to develop a provincial plan for the inventory work,
- to conduct the inventory with technical and financial assistance provided by the federal government,
- to undertake publication of results of the inventory which may be of particular interest to the province, with the assistance of the federal government,
- to provide the federal government with all inventory data required for compilation and publication of results on a national basis.

The success of this comprehensive land inventory depends on the co-ordinated effort of several federal government departments, two or more departments of each provincial government, and services from universities and consulting agencies.² The organizational

² See Appendix II for list of federal and provincial government agencies co-operating in the inventory.

structure being established to provide this co-ordination and to effect the data collection, compilation, storage, analysis and publication is briefly as follows:

Federal ARDA: Canada Land Inventory Section—

This staff section of the federal ARDA Directorate will consist of a Chief, six technical co-ordinators, and administrative and clerical staff. This unit will provide the over-all technical and administrative co-ordination in the planning, development and publication of the inventory. They will provide:

- initiative and co-ordination in the development of classification systems,
- co-ordination between federal and provincial research staffs in the application of the classification systems,
- interprovincial co-ordination of survey methodology and presentation of results,
- technical assistance to the provinces through provision of data and materials collected or produced by federal government agencies and consulting firms,
- collection, composition and editorial functions in the publication of inventory results.

Provincial ARDA: Land Inventory Committees—

These committees are being established within the framework of the provincial ARDA committees. Each committee will have the services of a Land Inventory Co-ordinator for the province (the three Maritime Provinces have agreed to undertake the inventory under a joint committee and with the services of one inventory co-ordinator). These provincial inventory committees and co-ordinators will provide the technical and administrative co-ordination in the planning, development and publication of the inventory within the province. They will:

- develop a provincial plan for the inventory work,
- supervise and administer the inventory within the

province, with the technical and financial assistance of the federal government,

- be responsible for the publication of the results of the inventory pertaining to the province, with assistance of the federal government.

*Cartographic Services—*The federal government will provide map compilation, production and printing facilities for the inventory. The compilation and production of maps will be undertaken by the Cartography Section of the Soils Research Institute, Canada Department of Agriculture. The provision of base maps and the printing of inventory maps will be undertaken by the Surveys and Mapping Branch of the Canada Department of Mines and Technical Surveys.

*Computer Mapping—*The federal government has undertaken to provide data processing facilities for the inventory. A system of computer mapping has been investigated and found to be technically and economically feasible. The development of this system of inventory data compilation, storage and analysis will require the design and manufacture of a special map input device, the design of systems analysis and computer programming, and the development of an operational unit.

*ADET (Assessment Determination and Evaluation Team)—*It is considered essential to establish a section to control the development of the computer mapping system so that it conforms with inventory requirements. This section (ADET) would analyze and guide the handling of all the inventory data to ensure the fullest, most economical use of the system and ensure that the methods and procedures used in the assessments are valid. This unit will also co-ordinate the compilation and analysis of socio-economic data on land use and on predicted land requirements relative to the various resource sectors.

Recommendations on a Land Resource Inventory made by the "Resources for Tomorrow" Conference and the Senate of Canada Special Committee on Land Use

"RESOURCES FOR TOMORROW" CONFERENCE,
MONTREAL, OCTOBER 23-28, 1961

Agriculture Workshop A—Review and Conclusions (Vol. 3 p. 63)

The Workshop agreed that it is highly desirable that a national policy on agricultural land and water use, including consideration of regional requirements, be developed. Such a national policy on agricultural land and water use should be developed in relation to other resources as part of an over-all plan for all renewable resources.

Agriculture Workshop B—Review and Conclusions (Vol. 3 pp. 71-72)

After some discussion of reports from earlier sessions, the Workshop formulated the following recommendations for the consideration of the Conference Steering Committee:

1. It is necessary that each province compile all its existing information and data pertinent to the use of land.
2. These data should be evaluated by the provinces and the evaluations integrated on a national basis with a view to achieving uniform standards.
3. The evaluations will indicate the need for additional surveys and research to complete the inventories.

Forestry Workshop B—Discussion (Vol. 3 p. 107)

The group then reached consensus on the following over-all conclusions and guidelines:

1. Type and intensity of management of forest land. In order to establish the basis for decisions on the type and intensity of forest land management, it is agreed that for the country as a whole:
 - (a) Criteria of economic productivity be defined, taking into consideration such factors as productive capacity of land and access to markets.

- (b) A forest land use classification be made in which criteria are taken into account.
- (c) A study be made of trends in social and economic pressures developing with regard to the use of forest land in Canada.

Wildlife Workshop A—Lead-off Speaker (Mr. Harper, Vol. 3 p. 116)

It would seem that a nation-wide program of land use planning with all resource interests represented will be essential before any new large scale programs of resource development occur. An inventory of wildlife resources would then indicate what we have and greatly assist us in planning for what we need.

Recreation Workshop A—Lead-off Speaker (Mr. MacDonald, Vol. 3 p. 172)

An organization established to provide an adequate recreational resource base cannot put forth its best effort unless it has the tools to work with, and the tool in this case is accurate information. . . . There is a need for basic research in the relationship of natural environment to recreation; a present recreation land use inventory and a recreation land use capability inventory.

Recreation Workshop A—Discussion (Vol. 3 p. 175)

There is need for fundamental studies. The Workshop agreed unanimously that knowledge and information in certain basic fields is inadequate. These basic fields include the following as they apply to recreation: the potentialities and limitations of the supply of renewable resources. . . .

The clear need is for a comprehensive and balanced research program for recreation, including (but not limited to) the following:

- (a) Present recreation land use inventory. . . .
- (b) Recreation resource capability inventory. To be determined here are the extent and quality of the resource base suitable for various types of public

and private recreation development. Specific resource areas proposed for study were: the shorelines of the Atlantic Provinces and Great Lakes; the Territories and Arctic Archipelago; and the regional resources within a 50 to 100 mile radius of large urban centers.

Recreation Workshop B—Discussion
(Vol. 3 p. 185)

There was a general agreement that three broad deficiencies hampered the management of renewable resources for recreational purposes. First was lack of knowledge concerning the potentialities and limitations of the supply of renewable resources and the present and future character of demand for their use. . . . Within this framework (inventories), the Workshop suggested specific projects:

- (a) Recreation land use inventory, designed to reveal the present extent, location and accessibility of public and private resources for recreation purposes.
- (b) Recreation land use capability inventory, designed to reveal the extent and quality of the resource base throughout Canada for varied recreational development.

Research Co-ordinators' Joint Statement
(Vol. 3, Appendix II)

The Conference affirmed the following needs:

1. To complete a country-wide assessment of resource supplies which may be set against long-term assessment of resource needs.
2. To make possible systematic studies of:
 - (a) Problems of resource management and development in all fields; and
 - (b) Economic potentials and social needs in all regions.

PROCEEDINGS OF THE SPECIAL COMMITTEE OF
THE SENATE ON LAND USE IN CANADA
No. 4, August 20, 1958.

Recommendations:

2. That it be called to the attention of the proper authorities the need of a systematic land use survey based upon appropriate factors to provide for an economic classification of the land according to its suitability.

This recommendation was restated in Proceeding No. 12, July 8, 1959.

Appendix II

Federal and Provincial Government Agencies Co-operating in the Canada Land Inventory

GOVERNMENT OF CANADA

Department of Agriculture

Departmental Administration

Data Processing Section

Economics Branch

Research Branch

Prairie Farm Rehabilitation Administration

Department of Finance

Department of Forestry

Administration Branch

Provincial Agreements Section

Agricultural Rehabilitation and Development Act

Forest Research Branch

Maritime Marshland Rehabilitation

Administration

Department of Mines and Technical Surveys

Geographical Branch

Surveys and Mapping Branch

Department of Northern Affairs and

National Resources

Canadian Wildlife Service

National Parks Branch

Water Resources Branch

Department of Trade and Commerce

Dominion Bureau of Statistics

Department of Transport

Meteorological Branch

GOVERNMENT OF ALBERTA

Department of Agriculture

ARDA Administration

Farm Economics Branch

Water Resources Branch

Department of Lands and Forests

Fish and Wildlife Branch

Forestry Branch

Lands Branch

Provincial Parks Commission

Department of Municipal Affairs

Assessment Branch

Town and Rural Planning Branch

Department of Provincial Secretary

Alberta Research Council

GOVERNMENT OF BRITISH COLUMBIA

Department of Agriculture

ARDA Administration*

Soil Survey Division

Department of Lands, Forests and Water Resources

Forest Service

Lands Service

Water Resources Service

Department of Recreation and Conservation

Fish and Game Branch

Provincial Parks Branch

Photographic Branch

GOVERNMENT OF MANITOBA

Department of Agriculture and Conservation

ARDA Administration

Publications and Statistics Branch

Soils and Crops Branch

Water Control and Conservation Branch

Department of Mines and Natural Resources

Forestry Branch

Game Branch

Lands Branch

Surveys Branch

Department of Municipal Affairs

Assessment Branch

* University of British Columbia co-operating through membership on Land Inventory Committees.

GOVERNMENT OF NEW BRUNSWICK

Interdepartmental

New Brunswick ARDA Committee

Department of Agriculture

Field Husbandry Branch

Department of Lands and Mines

Fish and Wildlife Branch

Scaling and Forest Management Branch

Photogrammetry Branch (Forest Inventory Section)

Parks Branch

GOVERNMENT OF NEWFOUNDLAND

Department of Economic Development

ARDA Administration

Tourist Development Branch

Department of Mines, Agriculture and Resources

Agriculture Branch

Crown Lands and Surveys Branch

Forestry Branch

Wildlife Branch

Department of Municipal Affairs and Supply

Local Assessments Branch

Urban and Rural Planning Branch

GOVERNMENT OF NOVA SCOTIA

Department of Agriculture

ARDA Administration

Soil Survey Unit

Immigration and Land Settlement Services

Nova Scotia Agricultural College

Department of Lands and Forests

Forestry Branch

Parks Branch

Wildlife Conservation Branch

Department of Municipal Affairs

Assessment Branch

Department of Provincial Secretary

Director of Research

Nova Scotia Research Foundation

GOVERNMENT OF ONTARIO

Department of Agriculture

ARDA Administration

University of Guelph

Farm Economics and Statistics Branch

Department of Lands and Forests

Fish and Wildlife Branch

Parks Branch

Research Branch

Surveys Branch

Department of Municipal Affairs

GOVERNMENT OF PRINCE EDWARD ISLAND

Department of Agriculture

ARDA Administration

Department of Industry, Natural Resources and Fisheries

Department of Municipal Affairs and Tourist Development

GOVERNMENT OF QUEBEC

Department of Agriculture and Colonization

ARDA Administration

Research Branch

Department of Lands and Forests

Forest Service

Surveys Branch

Economic Study and Forest Planning

Department of Tourism, Fish and Game

Parks and Reserves Service

Wildlife Management Service

Department of Municipal Affairs

GOVERNMENT OF SASKATCHEWAN

Department of Agriculture

ARDA Administration

Lands Branch

Research and Planning Branch

Statistics Branch

Department of Municipal Affairs

Saskatchewan Assessment Commission

Department of Natural Resources

Forest Branch

Parks and Conservation Branch

Wildlife Branch

